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10/719,103	11/21/2003	Jang-Kun Song	AB-1346 US	1943

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EXAMINER

BRIGGS, NATHANAEL R

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2871

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No. 10/719,103	Applicant(s) SONG, JANG-KUN	
Examiner NATHANAEL R. BRIGGS	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 January 2008.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15, 31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-15, 31 and 32 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
- Certified copies of the priority documents have been received.
 - Certified copies of the priority documents have been received in Application No. _____.
 - Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-15 and 31-32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurauchi et al. (US 6,323,921) in view of Sawasaki et al. (US 6,836,308).

4. Regarding claim 1, Kurauchi discloses an LCD (see figure 5A-C, and 7, for instance), having a first panel including: a first transparent substrate (32) having a pixel area (G); a thin film transistor (24, 27, 29a-b) disposed at the pixel area (G) so as to output a pixel voltage; a first color filter (7b) disposed at the pixel area (G), the first color filter (7b) having a first edge (portion to the right of the pixel electrode 28); a second color filter (6b) disposed adjacent to the first color filter (7b) and having a second edge; the first edge and the second edge being overlapped (see figure 5B) to provide an overlapped area between the first color filter (7b) and the second color filter (6b); a spacer (9b) disposed on the overlapped area between the first color filter (7b) and the adjacent second color filter (6b), the spacer (9b) having a same material as one of the

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first color filter (7b) and the second color filter (6b); and a pixel electrode (28) disposed on the first color filter (7b) so as to receive the pixel voltage; a second panel (column 4, lines 52-62) including: a second transparent substrate (column 4, lines 52-62); and a common electrode (column 4, lines 52-62) disposed on the second transparent substrate (column 4, lines 52-62), and a liquid crystal layer (column 4, lines 52-62) disposed between the first (32) and second (column 4, lines 52-62) panels, and wherein an opening (23) is formed through each of the first color filter (7b) and the second color filter (6a; see figure 5A) to partially expose the thin film transistor, and the pixel electrode (28) is electrically connected to the thin film transistor (24, 27, 29a-b) through the opening (23). However, Kurauchi does not expressly disclose a transparent spacer on the common electrode, the transparent spacer contacting with an end portion of the spacer.

5. Regarding claim 1, Sawasaki discloses an LCD (see figure 30, for instance), having a spacer formed of overlapping color filters (R, G, B) and a transparent spacer (54) on the common electrode (52), the transparent spacer (54) contacting with an end portion of the spacer (composed of R, G, B filters at the overlap).

6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transparent spacer of Sawasaki in the LCD of Kurauchi. The motivation for doing so would have been to reduce manufacturing costs and increase production yield, while increasing luminance and display characteristics, as taught by Sawasaki (column 4, lines 59-63; column 16, lines 52-56). Claim 1 is therefore unpatentable.

7. Regarding claim 2, Kurauchi in view of Sawasaki discloses the LCD of claim 1 (see Kurauchi figure 5A-C, and 7, and Sawasaki figure 30, for instance), and Kurauchi further discloses wherein the first color filter (7b) comprises a red, green, and a blue color filter (R, G, B) and the spacer comprises at least one of a red, green, and blue filter. Claim 2 is therefore unpatentable.

8. Regarding claim 31, Kurauchi in view of Sawasaki discloses the LCD of claim 1 (see Kurauchi figure 5A-C, and 7, and Sawasaki figure 30, for instance), and Kurauchi further discloses wherein the spacer (9b) has a column shape, the spacer (9b) being configured to maintain a cell gap between the first substrate (32) and the second substrate. Claim 31 is therefore unpatentable.

9. Regarding claim 32, Kurauchi in view of Sawasaki discloses the LCD of claim 1 (see Kurauchi figure 5A-C, and 7, and Sawasaki figure 30, for instance), and Sawasaki further discloses wherein the common electrode makes direct contact with the spacer (9b). Claim 32 is therefore unpatentable.

10. Claims 3, 5, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurauchi et al. (US 6,323,921) in view of Sawasaki et al. (US 6,836,308) as applied to claim 1 above, and further in view of Miyazaki et al. (US 5,757,451).

11. Regarding claims 3, 5, 7, and 9, Kurauchi in view of Sawasaki discloses the LCD of claim 1 (see figure 5A-C, and 7, Sawasaki figure 30, for instance), and Kurauchi further discloses the LCD including a light blocking pattern (25) in the form of a lattice-shape of a photo-sensitive pattern, where the pattern blocks light incident between the

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pixel area (28) and an adjacent pixel. However, Kurauchi in view of Sawasaki does not expressly disclose wherein the light-blocking pattern is disposed on the second panel on the common electrode.

12. Regarding claims 3, 5, 7, and 9, Miyazaki discloses an LCD (see figure 1, for instance) where the second panel comprises a light-blocking pattern (36) having a lattice-shape (column 5, lines 2-3) of a photo-sensitive pattern (column 11, lines 21-25) disposed on the common electrode (34), where the pattern blocks light incident between the pixel area in an adjacent pixel.

13. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the light-blocking pattern of Miyazaki in the LCD of Kurauchi in view of Sawasaki. The motivation for doing so would have been to build an inexpensive color display of high quality and high yield using stacked color filters as spacers, as exemplified by the LCD of Miyazaki (column 2, lines 48-53). Claims 3, 5, 7, and 9 are therefore unpatentable.

14. Claims 4, 6, 8, 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurauchi et al. (US 6,323,921) in view of Sawasaki et al. (US 6,836,308), in further view of Miyazaki et al. (US 5,757,451), as applied to claims 3, 5, 7, and 9, and further in view of Yamada (US 6,140,988).

15. Regarding claims 4, 6, 8, 10-11, 13, and 15, Kurauchi in view of Sawasaki, and in further view of Miyazaki discloses the LCD of claims 1-3, 5, 7, and 9 (see Kurauchi figures 5A-C and 7; Sawasaki figure 30; Miyazaki figure 1, for instance), and Kurauchi further discloses wherein the LCD has a liquid crystal layer and light visual pattern on

the common electrode. However, Kurauchi in view of Sawasaki, and in further view of Miyazaki fails to specifically disclose the liquid crystal molecules being vertically aligned.

16. Regarding claims 4, 6, 8, 10-11, 13, and 15, Yamada discloses an LCD apparatus where the liquid crystal molecules being vertically aligned (col. 1, lines 29-39).

17. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the liquid crystal molecules being vertically aligned since one would be motivated to provide a display apparatus with high contrast and outstanding viewing angle characteristics (col. 1, lines 39-45). Claims 4, 6, 8, 10-11, 13, and 15 are therefore unpatentable.

18. Regarding claims 12 and 14, Kurauchi in view of Sawasaki, and in further view of Miyazaki and in further view of Yamada discloses the LCD as recited above (see Kurauchi figures 5A-C and 7; Miyazaki figure 1, for instance), and Sawasaki further discloses the second panel further comprising transparent spacers (54) disposed on the common electrode (52), as elucidated in the rejection of claim 1. Claims 12 and 14 are therefore unpatentable.

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANAEL R. BRIGGS whose telephone number is (571)272-8992. The examiner can normally be reached on 9 AM - 5:30 PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathanael Briggs

4/25/2008

/Andrew Schechter/
Primary Examiner, Art Unit 2871